

FIGURE 1A

ATGGGCGCACTGGCCCCGGGCGCTGCTGCTG CCTCTGCTGGCC CAGTGGCTCCTG CGCGCC
M G A L A R A L L L P L L A Q W L L R A
CCCCGGAGCTGGCCCCCG CGCCCTTCACGC TGCCCTCCGGG TGGCCGCGCCA CGAAC
A P E L A P A P F T L P L R V A A A T N
CGCGTAGTTGCGCCACC CCGGGACCCGGG ACCCCTGCCGAG CGCCACGCCGAC GGCTTG
R V V A P T P G P G T P A E R H A D G L
GCGCTCGCCCTGGAGCCT GCCCTGGCGTCC CCCGCGGGCGCC GCCAACTTCTTG GCCATG
A L A L E P A L A S P A G A A N F L A M
GTAGACAACCTGCAGGGG GACTCTGGCCGC GGCTACTACCTG GAGATGCTGATC GGGACC
V D N L Q G D S G R G Y Y L E M L I G T

CCCCCGCAGAAGCTACAG ATTCTCGTTGAC ACTGGAAGCAGT AACTTTGCCGTG GCAGGA
P P Q K L Q I L V D T G S S N F A V A G

ACCCCGCACTCCTACATA GACACGTACTTT GACACAGAGAGG TCTAGCACATAC CGCTCC
T P H S Y I D T Y F D T E R S S T Y R S

AAGGGCTTTGACGTCACA GTGAAGTACACA CAAGGAAGCTGG ACGGGCTTCGTT GGGGAA
K G F D V T V K Y T Q G S W T G F V G E

GACCTCGTCACCATCCCC AAAGGCTTCAAT ACTTCTTTTCTT GTCAACATTGCC ACTATT
D L V T I P K G F N T S F L V N I A T I

TTTGAATCAGAGAATTTT TTTTTCCTGGG ATTAATGGAAT GGAATACTTGGC CTAGCT
F E S E N F F L P G I K W N G I L G L A

TATGCCACACTTGCCAAG CCATCAAGTTCT CTGGAGACCTTC TTCGACTCCCTG GTGACA
Y A T L A K P S S S L E T F F D S L V T

CAAGCAAACATCCCCAAC GTTTTCTCCATG CAGATGTGTGGA GCCGGCTTGCCC GTTGCT
Q A N I P N V F S M Q M C G A G L P V A

GGATCTGGGACCAACGGA GGTAGTCTTGTC TTGGGTGGAATT GAACCAAGTTTG TATAAA
G S G T N G G S L V L G G I E P S L Y K

GGAGACATCTGGTATACC CCTATTAAGGAA GAGTGGTACTAC CAGATAGAAATT CTGAAA
G D I W Y T P I K E E W Y Y Q I E I L K

TTGGAAATTGGAGGCCAA AGCCTTAATCTG GACTGCAGAGAG TATAACGCAGAC AAGGCC
L E I G G Q S L N L D C R E Y N A D K A

ATCGTGGACAGTGGCACC ACGCTGCTGCGC CTGCCCCAGAAG GTGTTTGATGCG GTGGTG
I V D S G T T L L R L P Q K V F D A V V

GAAGCTGTGGCCCGCGCA TCTCTGATTCCA GAATTCTCTGAT GGTTTCTGGA CTGGTCC
E A V A R A S L I P E F S D G F W T G S

CAGCTGGCGTGCTGGACG AATTCGGAACA CCTTGGTCTTAC TTCCCTAAATC TCCATC
Q L A C W T N S E T P W S Y F P K I S I

TACCTGAGAGATGAGAAC TCCAGCAGGTCA TTCCGTATCACA ATCCTGCCTCAG CTTTAC
Y L R D E N S S R S F R I T I L P Q L Y

ATTCAGCCCATGATGGGG GCCGGCCTGAAT TATGAATGTTAC CGATTGCGCATT TCCCCA
I Q P M M G A G L N Y E C Y R F G I S P

TCCACAAATGCGCTGGTG ATCGGTGCCACG GTGATGGAGGGC TTCTACGTCATC TTCGAC
S T N A L V I G A T V M E G F Y V I F D

AGAGCC CAGAAGAGGGTG GGCTTCGCAGCG AGCCCCCTGTGCA GAAATTGCAGGT GCTGCA

FIGURE 1B

R A Q K R V G F A A S P C A E I A G A A
GTGTCTGAAATTTCCGGGCCTTTCTCAACAGAGGATGTAGCCAGCAACTGTGTCCCCGCT
V S E I S G P F S T E D V A S N C V P A
CAGTCTTTGAGCGAGCCCATTTTGTGGATTGTGTCCTATGCGCTCATGAGCGTCTGTGGA
Q S L S E P I L W I V S Y A L M S V C G
GCCATCCTCCTTGTCTTAATCGTCCTGCTGCTGCTGCCGTTCCGGTGTCAGCGTCGCCCC
A I L L V L I V L L L L P F R C Q R R P
CGTGACCCTGAGGTCGTCAATGATGAGTCCTCTCTGGTCAGACATCGCTGGAAATGAATA
R D P E V V N D E S S L V R H R W K
GCCAGGCCTGACCTCAAGCAACCATGAACTCAGCTATTAAGAAAATCACATTTCCAGGGC
AGCAGCCGGGATCGATGGTGGCGCTTTCTCCTGTGCCCACCCGTCTTCAATCTCTGTTCT
GCTCCCAGATGCCTTCTAGATTCACTGTCTTTTGATTCTTGATTTTCAAGCTTTCAAATC
CTCCCTACTTCCAAGAAAATAATTAAAAAAAACCTTCATTCTAAACCAAAAAAAAAAAAA
AAAA

FIGURE 2A

ATGGCCCAAGCCCTGCCC TGGCTCCTGCTG TGGATGGGCGCG GGAGTGCTGCCT GCCCAC
M A Q A L P W L L L W M G A G V L P A H

GGCACCCAGCACGGCATC CGGCTGCCCCTG CGCAGCGGCCTG GGGGGCGCCCC CTGGGG
G T Q H G I R L P L R S G L G G A P L G

CTGCGGCTGCCCCGGGAG ACCGACGAAGAG CCCGAGGAGCCC GGCCGGAGGGGC AGCTTT
L R L P R E T D E E P E E P G R R G S F

GTGGAGATGGTGGACAAC CTGAGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACC
V E M V D N L R G K S G Q G Y Y V E M T

GTGGGCAGCCCCCGCAG ACGCTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCA
V G S P P Q T L N I L V D T G S S N F A

GTGGGTGCTGCCCCCAC CCCTTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACA
V G A A P H P F L H R Y Y Q R Q L S S T

TACCGGGACCTCCGGAAG GGTGTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E

CTGGGCACCGACCTGGTA AGCATCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATT
L G T D L V S I P H G P N V T V R A N I

GCTGCCATCACTGAATCA GACAAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCTTG
A A I T E S D K F F I N G S N W E G I L

GGGCTGGCCTATGCTGAG ATTGCCAGGCTT TGTGGTGCTGGC TTCCCCCTCAAC CAGTCT
G L A Y A E I A R L C G A G F P L N Q S

GAAGTGCTGGCCTCTGTC GGAGGGAGCATG ATCATTGGAGGT ATCGACCACTCG CTGTAC
E V L A S V G G S M I I G G I D H S L Y

ACAGGCAGTCTCTGGTAT ACACCCATCCGG CGGGAGTGGTAT TATGAGGTGATC ATTGTG
T G S L W Y T P I R R E W Y Y E V I I V

CGGGTGGAGATCAATGGA CAGGATCTGAAA ATGGACTGCAAG GAGTACAACTAT GACAAG
R V E I N G Q D L K M D C K E Y N Y D K

AGCATTGTGGACAGTGGC ACCACCAACCTT CGTTTGCCCCAAG AAAGTGTTTGAA GCTGCA
S I V D S G T T N L R L P K K V F E A A

GTCAAATCCATCAAGGCA GCCTCCTCCACG GAGAAGTTCCTT GATGGTTTCTGG CTAGGA
V K S I K A A S S T E K F P D G F W L G

GAGCAGCTGGTGTGCTGG CAAGCAGGCACC ACCCCTTGAAC ATTTTCCCAGTC ATCTCA
E Q L V C W Q A G T T P W N I F P V I S

CTCTACCTAATGGGTGAG GTTACCAACCAG TCCTTCCGCATC ACCATCCTTCCG CAGCAA
L Y L M G E V T N Q S F R I T I L P Q Q

TACCTGCGGCCAGTGGA GATGTGGCCACG TCCCAAGACGAC TGTTACAAGTTT GCCATC

FIGURE 2B

Y L R P V E D V A T S Q D D C Y K F A I
TCACAGTCATCCACGGGC ACTGTTATGGGAGCTGTTATCATGGAGGGCTTCTACGTTGTC
S Q S S T G T V M G A V I M E G F Y V V
TTTGATCGGGCCCCGAAAA CGAATTGGCTTT GCTGTCAGCGCTTGCCATGTGCACGATGAG
F D R A R K R I G F A V S A C H V H D E
TTCAGGACGGCAGCGGTG GAAGGCCCTTTT GTCACCTTGGACATGGAAGACTGTGGCTAC
F R T A A V E G P F V T L D M E D C G Y
AACATTCCACAGACAGATGAGTCAACCCTC ATGACCATAGCC TATGTCATGGCTGCCATC
N I P Q T D E S T L M T I A Y V M A A I
TGCGCCCTCTTCATGCTG CCACTCTGCCTC ATGGTGTGTCAGTGGCGCTGCCTC CGCTGC
C A L F M L P L C L M V C Q W R C L R C
CTGCGCCAGCAGCATGAT GACTTTGCTGAT GACATCTCCCTG CTGAAGTGAGGA GGCCCA
L R Q Q H D D F A D D I S L L K
TGGGCAGAAGATAGAGAT TCCCCTGGACCA CACCTCCGTGGT TCACTTTGGTCA CAAGTA
GGAGACACAGATGGCACC TGTGGCCAGAGC ACCTCAGGACCC TCCCCACCCACC AAATGC
CTCTGCCTTGATGGAGAA GGAAAAGGCTGG CAAGGTGGGTTC CAGGGACTGTAC CTGTAG
GAAACAGAAAAGAGAAGA AAGAAGCACTCT GCTGGCGGGAAT ACTCTTGGTCAC CTCAAA
TTTAAGTCGGGAAATTCT GCTGCTTGAAAC TTCAGCCCTGAA CCTTTGTCCACC ATTCTT
TTAAAT TCTCCAACCCAA AGTATTCTTCTT TTCTTAGTTTCA GAAGTACTGGCA TCACAC
GCAGGT TACCTTGGCGTG TGTCCCTGTGGT ACCCTGGCAGAG AAGAGACCAAGC TTGTTT
CCCTGCTGGCCAAAGTCA GTAGGAGAGGAT GCACAGTTTGCT ATTTGCTTTAGA GACAGG
GACTGTATAAAACAAGCCT AACATTGGTGCA AAGATTGCCTCT TGAAAAAAAAA AAA

FIGURE 3A

ATGGCCCAAGCCCTGCCC TGGCTCCTGCTG TGGATGGGCGCG GGAGTGCTGCCT GCCCAC
M A Q A L P W L L L W M G A G V L P A H

GGCACC CAGCACGGCATC CGGCTGCCCCCTG CGCAGCGGCCTG GGGGGCGCCCC CTGGGG
G T Q H G I R L P L R S G L G G A P L G

CTGCGG CTGCCCCGGGAG ACCGACGAAGAG CCCGAGGAGCCC GGCCGGAGGGGC AGCTTT
L R L P R E T D E E P E E P G R R G S F

GTGGAGATGGTGGACAAC CTGAGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACC
V E M V D N L R G K S G Q G Y Y V E M T

GTGGGCAGCCCCCGCAG ACGCTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCA
V G S P P Q T L N I L V D T G S S N F A

GTGGGTGCTGCCCCCAC CCCTTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACA
V G A A P H P F L H R Y Y Q R Q L S S T

TACCGGGACCTCCGGAAG GGTGTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E

CTGGGCACCGACCTGGTA AGCATCCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATT
L G T D L V S I P H G P N V T V R A N I

GCTGCCATCACTGAATCA GACAAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCCTG
A A I T E S D K F F I N G S N W E G I L

GGGCTGGCCTATGCTGAG ATTGCCAGGCCT GACGACTCCCTG GAGCCTTTCTTT GACTCT
G L A Y A E I A R P D D S L E P F F D S

CTGGTAAAGCAGACCCAC GTTCCCAACCTC TTCTCCCTGCAG CTTTGTGGTGCT GGCTTC
L V K Q T H V P N L F S L Q L C G A G F

CCCCTCAACCAGTCTGAA GTGCTGGCCTCT GTCGGAGGGAGC ATGATCATTGGA GGTATC
P L N Q S E V L A S V G G S M I I G G I

GACCACTCGCTGTACACA GGCAGTCTCTGG TATACACCCATC CGGCGGGAGTGG TATTAT
D H S L Y T G S L W Y T P I R R E W Y Y

GAGGTCATCATTGTGCGG GTGGAGATCAAT GGACAGGATCTG AAAATGGACTGC AAGGAG
E V I I V R V E I N G Q D L K M D C K E

TACAAC TATGACAAGAGC ATTGTGGACAGT GGCACCACCAAC CTTGTTTGCCC AAGAAA
Y N Y D K S I V D S G T T N L R L P K K

GTGTTTGAAGCTGCAGTC AAATCCATCAAG GCAGCCTCCTCC ACGGAGAAGTTC CCTGAT
V F E A A V K S I K A A S S T E K F P D

FIGURE 3B

GGTTTCTGGCTAGGAGAG CAGCTGGTGTGC TGGCAAGCAGGC ACCACCCCTTGG AACATT
G F W L G E Q L V C W Q A G T T P W N I

TTCCCAAGTCATCTCACTC TACCTAATGGGT GAGGTTACCAAC CAGTCCTTCCGC ATCACC
F P V I S L Y L M G E V T N Q S F R I T

ATCCTTCCGCAGCAATAC CTGCGGCCAGTG GAAGATGTGGCC ACGTCCCAAGAC GACTGT
I L P Q Q Y L R P V E D V A T S Q D D C

TACAAGTTTGCCATCTCA CAGTCATCCACG GGCACTGTTATG GGAGCTGTTATC ATGGAG
Y K F A I S Q S S T G T V M G A V I M E

GGCTTCTACGTTGTCTTT GATCGGGCCCGA AAACGAATTGGC TTTGCTGTCAGC GCTTGC
G F Y V V F D R A R K R I G F A V S A C

CATGTGCACGATGAGTTC AGGACGGCAGCG GTGGAAGGCCCT TTTGTACCTTG GACATG
H V H D E F R T A A V E G P F V T L D M

GAAGACTGTGGCTACAAC ATTCCACAGACA GATGAGTCAACC CTCATGACCATA GCCTAT
E D C G Y N I P Q T D E S T L M T I A Y

GTCATGGCTGCCATCTGC GCCCTCTTCATG CTGCCACTCTGC CTCATGGTGTGT CAGTGG
V M A A I C A L F M L P L C L M V C Q W

CGCTGCCTCCGCTGCCTG CGCCAGCAGCAT GATGACTTTGCT GATGACATCTCC CTGCTG
R C L R C L R Q Q H D D F A D D I S L L

AAGTGAGGAGGCCCATGG GCAGAAGATAGA GATTCCCCTGGA CCACACCTCCGT GGTTC A
K

CTTTGGTCAAAAGTAGGA GACACAGATGGC ACCTGTGGCCAG AGCACCTCAGGA CCCTCC
CCACCCACCAAATGCCTC TGCCTTGATGGA GAAGGAAAAGGC TGGCAAGGTGGG TTCCAG
GGACTGTACCTGTAGGAA ACAGAAAAGAGA AGAAAGAAGCAC TCTGCTGGCGGG AATACT
CTTGGT CACCTCAAATTT AAGTCGGGAAAT TCTGCTGCTTGA AACTTCAGCCCT GAACCT
TTGTCCACCATTCCTTTA AATTCTCCAACC CAAAGTATTCTT CTTTCTTAGTT TCAGAA
GTACTGGCATCACAGCA GGTTACCTTGGC GTGTGTCCCTGT GGTACCCTGGCA GAGAAG
AGACCAAGCTTGT TTTCCC TGCTGGCCAAAG TCAGTAGGAGAG GATGCACAGTTT GCTATT
TGCTTTAGAGACAGGGAC TGTATAACAAG CCTAACATTGGT GCAAAGATTGCC TCTTGA
ATTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

FIGURE 4

ATGGCCCCAGCGCTGCA CTGGCTCCTGCT ATGGGTGGGCTC GGAATGCTGCC TGCCAG
M A P A L H W L L L W V G S G M L P A Q
GGAACCCATCTCGGCAT CCGGCTGCCCCCT TCGCAGCGGCCT GGCAGGGCCACC CCTGGGC
G T H L G I R L P L R S G L A G P P L G
CTGAGGCTGCCCCGGA GACTGACGAGGAATCGGAGGAGCC TGGCCGGAGAGG CAGCTTT
L R L P R E T D E E S E E P G R R G S F
GTGGAGATGGTGGACAA CCTGAGGGGAAAGTCCGGCCAGGG CTAATATGTGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T
GTAGG CAGCCCCCACA GACGCTCAACAT CCTGGTGGACAC GGGCAGTAGTAA CTTTGCA
V G S P P Q T L N I L V D T G S S N F A
GTGGGGGCTGCCCCACA CCCTTTCCTGCA TCGTACTACCA GAGGCAGCTGTC CAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T
TATCGAGACCTCCGAAA GGGTGTGTATGT GCCCTACACCCA GGGCAAGTGGGA GGGGGAA
Y R D L R K G V Y V P Y T Q G K W E G E
CTGGGCACCGACTGGT GAGCATCCCTCA TGGCCCAACGT CACTGTGCGTGC CAACATT
L G T D L V S I P H G P N V T V R A N I
GCTGC CACTGAATC GGACAAGTTCTT CATCAATGGTTC CAACTGGGAGGG CATCCTA
A A I T E S D K F F I N G S N W E G I L
GGGCTGGCCTATGCTGA GATTGCCAGGCC CGACGACTCTTT GGAGCCCTTCTT TGA CTCC
G L A Y A E I A R P D D S L E P F F D S
CTGGTGAAGCAGACCCA CATTCCCAACAT CTTTTCCTGCA GCTCTGTGGCGC TGGCTTC
L V K Q T H I P N I F S L Q L C G A G F
CCCCTCAACCAGACCGA GGCAGCTGGCCTC GGTGGGAGGGAG CATGATCATTGG TGGTATC
P L N Q T E A L A S V G G S M I I G G I
GACCACTCGCTATACAC GGGCAGTCTCTG GTACACACCCAT CCGGCGGGAGTG GTATTAT
D H S L Y T G S L W Y T P I R R E W Y Y
GAAGTGATCATTGTACG TGTGGAAATCAA TGGTCAAGATCT CAAGATGGACTG CAAGGAG
E V I I V R V E I N G Q D L K M D C K E
TACAACTACGACAAGAG CATTGTGGACAG TGGGACCACCAA CCTTCGCTTGCC CAAGAAA
Y N Y D K S I V D S G T T N L R L P K K
GTATT TGAAGCTGCCGT CAAGTCCATCAA GGCAGCCTCCTC GACGGAGAAGTT CCCGGAT
V F E A A V K S I K A A S S T E K F P D
GGCTTTTGGCTAGGGGA GCAGCTGGTGTG CTGGCAAGCAGG CACGACCCCTTGGAACATT
G F W L G E Q L V C W Q A G T T P W N I
TTCCCAGTCATTCTACT TTACCTCATGGG TGAAGTCACCAA TCAGTCCTTCCG CATCACC
F P V I S L Y L M G E V T N Q S F R I T
ATCCTTCCTCAGCAATA CCTACGGCCCGT GGAGGACGTGGC CACGTCCCAAGA CGACTGT
I L P Q Q Y L R P V E D V A T S Q D D C
TACAAGTTCTGCTCTC ACAGTCATCCAC GGGCACTGTTAT GGGAGCCGTCAT CATGGAA
Y K F A V S Q S S T G T V M G A V I M E
GGTTTCTATGTCGTCTT CGATCGAGCCCG AAAGCGAATTGG CTTTGCTGTCAG CGCTTGC
G F Y V V F D R A R K R I G F A V S A C
CATGTGCACGATGAGTT CAGGACGGCGGC AGTGAAGGTCC GTTTGTTACGGC AGACATG
H V H D E F R T A A V E G P F V T A D M
GAAGACTGTGGCTACAA CATTCCCCAGAC AGATGAGTCAAC ACTTATGACCAT AGCCTAT
E D C G Y N I P Q T D E S T L M T I A Y
GTCATGGCGGCATCTG CGCCCTCTTCAT GTTGCCACTCTG CCTCATGGTATG TCAGTGG
V M A A I C A L F M L P L C L M V C Q W
CGCTGCCTGCGTTGCCT GCGCCACCAGCA CGATGACTTTGC TGATGACATCTC CTGCTC
R C L R C L R H Q H D D F A D D I S L L
AAGTAAGGAGGCTCGTG GGCAGATGATGG AGACGCCCTGG ACCACATCTGGG TGGTTCC
K
CTTTGGTCACATGAGTT GGAGCTATGGAT GGTACCTGTGGC CAGAGCACCTCA GGACCCT
CACCAACCTGCCAATGC TTCTGGCGTGAC AGAACAGAGAAA TCAGGCAAGCTG GATTACA
GGGCTTGCACCTGTAGG ACACAGGAGAGG GAAGGAAGCAGC GTTCTGGTGGCA GGAATAT
CCTTAGGCACCACAAAC TTGAGTTGGAAA TTTTGCTGCTTG AAGCTTCAGCCC TGACCCT
CTGCC CAGCATCCTTTA GAGTCTCCAACC TAAAGTATTCTT-TATGTCCTTCCA GAAGTAC
TGGCGTCATACTCAGGC TACCCGGCATGT GTCCCTGTGGTA CCCTGGCAGAGA AAGGGCC
AATCTCATTCCCTGCTG GCCAAAGTCAGC AGAAGAAGGTGA AGTTTGCCAGTT GCTTTAG
TGATAGGACTGCAGAC TCAAGCCTACAC TGGTACAAAGAC TGGCTCTTGAGA TAAACAA
GAA

FIGURE 5

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1 MAQALPWLLLWMGAGVLPAGHTQHGI RLP LRSGLG GAPLGLRLPRETDEE 50
  || || |||||.|||.||| || ||||| ||||| ||||| |||||
1 MAPALHWLLLWVGSGMLPAQGTHLGI RLP LRSGLAGPPLGLRLPRETDEE 50

51 PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPPQTLNILVDTGSSNFA 100
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
51 SEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPPQTLNILVDTGSSNFA 100

101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGWEGELGTDLVSI PH 150
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGWEGELGTDLVSI PH 150

151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200

201 LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSlyTGSLW 250
  ||||| :||: ||||| |||||. ||||| ||||| ||||| ||||| |||||
201 LVKQTHIPNIFSLQLCGAGFPLNQTEALASVGGSMIIGGIDHSlyTGSLW 250

251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLR LPKK 300
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLR LPKK 300

301 VFEAAVKSIIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLY LMG 350
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
301 VFEAAVKSIIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLY LMG 350

351 EVTNQSF RITILPQOYL RPVEDVATSQDDCYKFAISQSSTGTVMGAVIME 400
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| :|||
351 EVTNQSF RITILPQOYL RPVEDVATSQDDCYKFAVSQSSTGTVMGAVIME 400

401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT 450
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTADMEDCGYNIPQT 450

451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRQQHDDFADDISLL 500
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRHQHDDFADDISLL 500

501 K 501
  |
501 K 501
```


FIGURE 6A

ATGGCTAGC ATGACTGGTGGG CAGCAAATGGGT CGCGGATCCACC CAGCACGGCATC CGG
M A S M T G G Q Q M G R G S T Q H G I R

CTGCCCCCTG CGCAGCGGCCTG GGGGGCGCCCC CTGGGGCTGCGG CTGCCCCGGGAG ACC
L P L R S G L G G A P L G L R L P R E T

GACGAAGAG CCCGAGGAGCCC GGCCGGAGGGG AGCTTTGTGGAG ATGGTGGACAAC CTG
D E E P E E P G R R G S F V E M V D N L

AGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACCGTGGG AGCCCCCGCAG ACG
R G K S G Q G Y Y V E M T V G S P P Q T

CTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCAGTGGGT GCTGCCCCCAC CCC
L N I L V D T G S S N F A V G A A P H P

TTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACATACCG GACCTCCGAAG GGC
F L H R Y Y Q R Q L S S T Y R D L R K G

GTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAGCTGGG ACCGACCTGGTA AGC
V Y V P Y T Q G K W E G E L G T D L V S

ATCCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATTGCTGCC ATCACTGAATCA GAC
I P H G P N V T V R A N I A A I T E S D

AAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCCTGGGGCTG GCCTATGCTGAG ATT
K F F I N G S N W E G I L G L A Y A E I

GCCAGGCCT GACGACTCCCTG GAGCCTTTCTTT GACTCTCTGGTA AAGCAGACCCAC GTT
A R P D D S L E P F F D S L V K Q T H V

CCCAACCTC TTCTCCCTGCAG CTTTGTGGTGCT GGCTTCCCCCTC AACCAGTCTGAA GTG
P N L F S L Q L C G A G F P L N Q S E V

CTGGCCTCT GTCGGAGGGAGC ATGATCATTGGA GGTATCGACCAC TCGCTGTACACA GGC
L A S V G G S M I I G G I D H S L Y T G

AGTCTCTGG TATACACCCATC CGGCGGGAGTGG TATTATGAGGTC ATCATTGTGCGG GTG
S L W Y T P I R R E W Y Y E V I I V R V

GAGATCAAT GGACAGGATCTG AAAATGGACTGC AAGGAGTACAAC TATGACAAGAGC ATT
E I N G Q D L K M D C K E Y N Y D K S I

GTGGACAGT GGCACCACCAAC CTTTCGTTGCCC AAGAAAGTGTTC GAAGCTGCAGTC AAA
V D S G T T N L R L P K K V F E A A V K

TCCATCAAG GCAGCCTCCTCC ACGGAGAAGTTC CCTGATGGTTTC TGGCTAGGAGAG CAG
S I K A A S S T E K F P D G F W L G E Q

CTGGTGTGC TGGCAAGCAGGC ACCACCCCTTGG AACATTTTCCCA GTCATCTCACTC TAC
L V C W Q A G T T P W N I F P V I S L Y

CTAATGGGT GAGGTTACCAAC CAGTCCTTCCGC ATCACCATCCTT CCGCAGCAATAC CTG
L M G E V T N Q S F R I T I L P Q Q Y L

CGGCCAGTGG AAGATGTGGCCA CGTCCCAAGACG ACTGTTACAAGT TTGCCATCTCAC AG

FIGURE 6B

R P V E D V A T S Q D D C Y K F A I S Q
TCATCCACGG GCACTGTTATGG GAGCTGTTATCA TGGAGGGCTTCT ACGTTGTCTTTGAT
S S T G T V M G A V I M E G F Y V V F D
CGGGCCCGAA AACGAATTGGCT TTGCTGTCAGCG CTTGCCATGTGC ACGATGAGTTCAGG
R A R K R I G F A V S A C H V H D E F R
ACGGCAGCGG TGAAGGCCCTT TTGTCACCTTGG ACATGGAAGACT GTGGCTACAACA TT
T A A V E G P F V T L D M E D C G Y N I
CCACAGACAG ATGAGTCATGA
P Q T D E S *

FIGURE 7A

ATGGCTAGC ATGACTGGTGA CAGCAAATGGGT CGCGGATCGATG ACTATCTCTGAC TCT
M A S M T G G Q Q M G R G S M T I S D S

CCGCGTGAA CAGGACGGATCC ACCCAGCACGGC ATCCGGCTGCCC CTGCGCAGCGGC CTG
P R E Q D G S T Q H G I R L P L R S G L

GGGGGCGCC CCCCTGGGGCTG CGGCTGCCCCGG GAGACCGACGAA GAGCCCCGAGGAG CCC
G G A P L G L R L P R E T D E E P E E P

GGCCGGAGG GGCAGCTTTGTG GAGATGGTGGAC AACCTGAGGGGC AAGTCGGGGCAG GGC
G R R G S F V E M V D N L R G K S G Q G

TACTACGTG GAGATGACCGTG GGCAGCCCCCG CAGACGCTCAAC ATCCTGGTGGAT ACA
Y Y V E M T V G S P P Q T L N I L V D T

GGCAGCAGT AACTTTGCAGTG GGTGCTGCCCC CACCCCTTCCTG CATCGCTACTAC CAG
G S S N F A V G A A P H P F L H R Y Y Q

AGGCAGCTG TCCAGCACATAC CGGGACCTCCGG AAGGGCGTGTAT GTGCCCTACACC CAG
R Q L S S T Y R D L R K G V Y V P Y T Q

GGCAAGTGG GAAGGGGAGCTG GGCACCGACCTG GTAAGCATCCCC CATGGCCCCAAC GTC
G K W E G E L G T D L V S I P H G P N V

ACTGTGCGT GCCAACATTGCT GCCATCACTGAA TCAGACAAGTTC TTCATCAACGGC TCC
T V R A N I A A I T E S D K F F I N G S

AACTGGGAA GGCATCCTGGGG CTGGCCTATGCT GAGATTGCCAGG CCTGACGACTCC CTG
N W E G I L G L A Y A E I A R P D D S L

GAGCCTTTC TTTGACTCTCTG GTAAAGCAGACC CACGTTCCCAAC CTCTTCTCCCTG CAG
E P F F D S L V K Q T H V P N L F S L Q

CTTTGTGGT GCTGGCTTCCCC CTCAACCACTCT GAAGTGCTGGCC TCTGTGGAGGG AGC
L C G A G F P L N Q S E V L A S V G G S

ATGATCATT GGAGGTATCGAC CACTCGCTGTAC ACAGGCAGTCTC TGGTATACACCC ATC
M I I G G I D H S L Y T G S L W Y T P I

CGGCGGGAG TGGTATTATGAG GTCATCATTGTG CGGGTGGAGATC AATGGACAGGAT CTG
R R E W Y Y E V I I V R V E I N G Q D L

AAAATGGAC TGCAAGGAGTAC AACTATGACAAG AGCATTGTGGAC AGTGGCACCACC AAC
K M D C K E Y N Y D K S I V D S G T T N

CTTCGTTTG CCCAAGAAAGTG TTTGAGCTGCA GTCAAATCCATC AAGGCAGCCTCC TCC
L R L P K K V F E A A V K S I K A A S S

ACGGAGAAG TTCCCTGATGGT TTCTGGCTAGGA GAGCAGCTGGTG TGCTGGCAAGCA GGC
T E K F P D G F W L G E Q L V C W Q A G

ACCACCCCTT GGAACATTTTCC CAGTCATCTCAC TCTACCTAATGG GTGAGGTTACCAAC
T T P W N I F P V I S L Y L M G E V T N

FIGURE 7B

CAGTCCTTCC GCATCACCATCC TTCCGCAGCAAT ACCTGCGGCCAG TGGAAGATGTGG CC
Q S F R I T I L P Q Q Y L R P V E D V A

ACGTCCCAAG ACGACTGTTACA AGTTTGCCATCT CACAGTCATCCA CGGGCACTGTTATG
T S Q D D C Y K F A I S Q S S T G T V M

GGAGCTGTTA TCATGGAGGGCT TCTACGTTGTCT TTGATCGGGCCC GAAAACGAATTG GC
G A V I M E G F Y V V F D R A R K R I G

TTTGCTGTCA GCGCTTGCCATG TGCACGATGAGT TCAGGACGGCAG CGGTGGAAGGCC CT
F A V S A C H V H D E F R T A A V E G P

TTGTGCACCT TGGACATGGAAG ACTGTGGCTACA ACATTCCACAGA CAGATGAGTCAT GA
F V T L D M E D C G Y N I P Q T D E S *

FIGURE 8A

ATGACTCAGCATGG TATTCGTCTGCC ACTGCGTAGCGG TCTGGGTGGTGC TCCACTGGGT
M T Q H G I R L P L R S G L G G A P L G -
CTGCGTCTGCCCCG GGAGACCGACGA AGAGCCCGAGGA GCCCGCCGGAG GGGCAGCTTT
L R L P R E T D E E P E E P G R R G S F -
GTGGAGATGGTGA CAACCTGAGGGG CAAGTCGGGGCA GGGCTACTACGT GGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T -
GTGGGCAGCCCCC GCAGACGCTCAA CATCCTGGTGA TACAGGCAGCAG TAACTTTGCA
V G S P P Q T L N I L V D T G S S N F A -
GTGGGTGCTGCCCC CCACCCCTTCCT GCATCGCTACTA CCAGAGGCAGCT GTCCAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T -
TACCGGGACCTCCG GAAGGGCGTGTA TGTGCCCTACAC CCAGGGCAAGTG GGAAGGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E -
CTGGGCACCGACCT GGTAAGCATCCC CCATGGCCCCAA CGTCACTGTGCG TGCCAACATT
L G T D L V S I P H G P N V T V R A N I -
GCTGCCATCACTGA ATCAGACAAGTT CTTTCATCAACGG CTCCAAGTGGGA AGGCATCCTG
A A I T E S D K F F I N G S N W E G I L -
GGGCTGGCCTATGC TGAGATTGCCAG GCCTGACGACTC CCTGGAGCCTTT CTTTGACTCT
G L A Y A E I A R P D D S L E P F F D S
CTGGTAAAGCAGAC CCACGTTCCCAA CCTCTTCTCCCT GCAGCTTTGTGG TGCTGGCTTC
L V K Q T H V P N L F S L Q L C G A G F -
CCCCTCAACCAGTC TGAAGTGCTGGC CTCTGTGCGAGG GAGCATGATCAT TGGAGGTATC
P L N Q S E V L A S V G G S M I I G G I -
GACCACTCGCTGTA CACAGGCAGTCT CTGGTATACACC CATCCGGCGGGA GTGGTATTAT
D H S L Y T G S L W Y T P I R R E W Y Y -
GAGGTCATCATTGT GCGGGTGGAGAT CAATGGACAGGA TCTGAAAATGGA CTGCAAGGAG
E V I I V R V E I N G Q D L K M D C K E
TACAACTATGACAA GAGCATTGTGGA CAGTGGCACCAC CAACCTTCGTTT GCCCAAGAAA
Y N Y D K S I V D S G T T N L R L P K K -
GTGTTTGAAGCTGC AGTCAAATCCAT CAAGGCAGCCTC CTCCACGGAGAA GTTCCCTGAT
V F E A A V K S I K A A S S T E K F P D -
GGTTTCTGGCTAGG AGAGCAGCTGGT GTGCTGGCAAGC AGGCACCACCCC TTGGAACATT
G F W L G E Q L V C W Q A G T T P W N I -
TTCCCAGTCATCTC ACTCTACCTAAT GGGTGAGGTTAC CAACCAGTCCTT TCGCATCACC
F P V I S L Y L M G E V T N Q S F R I T -
ATCCTTCCGCAGCA ATACCTGCGGCC AGTGGAAGATGT GGCCACGTCCCA AGACGACTGT
I L P Q Q Y L R P V E D V A T S Q D D C -

FIGURE 8B

TACAAGTTTGCCAT CTCACAGTCATC CACGGGCACTGT TATGGGAGCTGT TATCATGGAG
Y K F A I S Q S S T G T V M G A V I M E -
GGCTTCTACGTTGT CTTTGATCGGGC CCGAAAACGAAT TGGCTTTGCTGT CAGCGCTTGC
G F Y V V F D R A R K R I G F A V S A C -
CATTAG
H *

FIGURE 9

IP: Ab 369		← CTF99
IP: Ab C8		← CTF99
	mock transfected	
	Asp2-2 antisense	
	Asp2-1 reverse	
	Asp2-2 reverse	
	Asp2-1 antisense	

FIGURE 10

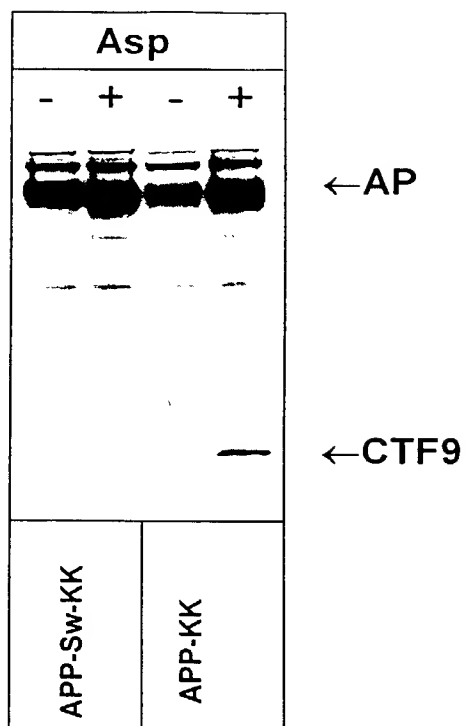


FIGURE 11

MAQALPWLLLWMGAGVLPAGHTQHGIPLRSLGGLRLPRETDEE
PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPPQTLNVLDTGSSNFA
VGAAPHPFLHRYRQLSSTYRDLRGVVPYTQGWEGELGTDLVSI PH
GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS
LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMI IGGIDHSLYTGSLW
YTPIRREWYYEVI IVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRPKK
VFEEAVKSIKAASSTEKFPDGFVLGEQLVCWQAGTTPWNI FPVISLYLMG
EVTNQSFRTILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME
GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT
DES

FIGURE 12

MAQALPWLLWLGAGVLPAGHTQHGIRLPLRSGLGGAFLGLRLPRETDEE
PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPQTLNILVDTGSSNFA
VGAAPHFPLHRYRQLSSTYRDLRKGYYVPYTQGWEGELGTDLVSI PH
GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFDS
LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSLYTGSLW
YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRPKK
VFEAAVKSIIKAASSTEKFPDGFVLGEQLVCWQAGTTPWNI FPVISLYLMG
EVTNQSFRTILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME
GFYVVFDRAKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT
DESHHHHHH